

REMARKS

Claims 1-70 are pending. Original claims 1-14 are rejected under 35 U.S.C. § 103(a). Claims 8 and 14 have been amended. New claims 15-70 have been added.

Examiner has rejected claims 1-3, 5-9, and 11-14 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 6,127,971 to Calderbank et al. (Calderbank) in view of "Wideband CDMA simulation" to Shinoda et al. (Shinoda).

Claims 1-8 recite "A method of operating a communication circuit, comprising the steps of: receiving a plurality of signals from a plurality of remote transmitters; *determining* which of the plurality of remote transmitters use transmit diversity; *calculating* a signal strength of each respective signal of the plurality of signals; and *selecting* one of the remote transmitters in response to the steps of determining and calculating." (emphasis added). Calderbank discloses transmitting a block of B bits of a time slot simultaneously. The B bits are divided into three groups. Encoders 110, 120, and 130 separately encode each group of respective bits with codes C₁, C₂, and C₃. Transmitters 110-1 and 110-2 transmit bits from encoder 110. Transmitters 120-1, 120-2, and 120-3 transmit bits from encoder 120. Transmitter 130-1 transmits bits from encoder 130. (col. 4, lines 25-57). Receivers 210-1 and 210-2 multiply their received signal by code C₁. Receivers 220-1 and 220-2 multiply their received signal by code C₂. Receivers 230-1 and 230-2 multiply their received signal by code C₃. (col. 8, lines 25-40). The receivers do not determine "which of the plurality of remote transmitters use transmit diversity" as required by claims 1-8. The receivers must receive all bits from all transmitters to reconstruct B bits in the time slot. Different receivers simply use different codes. Thus, claims 1-8 are patentable under 35 U.S.C. § 103(a).

Furthermore, Calderbank does not disclose the step of "calculating a signal strength of each respective signal of the plurality of signals." Examiner suggests that Calderbank discloses selecting a "best" antenna at col. 3, lines 2-9. Applicant respectfully disagrees. Calderbank must select all antennas to recover all B bits of the transmitted signals. Calderbank discloses two methods to

accomplish this task. The first method is to decode all transmitted code words. (col. 4, lines 60-62). The second and preferred method is to partition the decoding as shown in the Figure. (col. 3, lines 5-8). Neither method selects a "best" antenna. Receivers 210 decode signals with code C_1 . Receivers 220 decode signals with code C_2 . Receivers 230 decode signals with code C_3 . This decoding process has nothing to do with calculating a signal strength as required by claims 1-8.

Examiner states that it would have been inherent to use some type of (signal strength) measurement "since these measurements are used as part of the group interference suppression since each transmitter transmits at a different power." Applicant respectfully disagrees. Calderbank discloses that C_1 decoded signals at antennas 210 may be subtracted from signals received at other antennas 220 and 230. (col. 7, lines 16-18). This increases the signal to noise ratio at the other antennas. Less transmit power, therefore, is required at these other antennas. (col. 7, lines 38-43). Calderbank, therefore, does not teach or suggest "calculating a signal strength of each respective signal of the plurality of signals" as required by claims 1-8. The transmitted signal strength is predetermined by the transmitter according to the order in which the receiver will decode the received signal. Examiner states that Shinoda discloses further motivation since SIR measurements are used for power control. The SIR measurements for power control, however, are limited to a specific transmitter and not "calculating a signal strength of each respective signal of the plurality of signals" from a plurality of remote transmitters. Claims 1-8, therefore, are patentable under 35 U.S.C. § 103(a).

Finally, Calderbank does not disclose the step of "selecting one of the remote transmitters in response to the steps of determining and calculating." As previously discussed, Calderbank fails to disclose the steps of determining and calculating as required by claims 1-8. Moreover, Calderbank does not select one of the remote transmitters. Calderbank teaches that all the remote transmitters 110, 120, and 130 must be selected to receive all B bits of the time slot. For all the foregoing reasons, therefore, claims 1-8 are patentable under 35 U.S.C. § 103(a).

Examiner has rejected claim 9 as being unpatentable under 35 U.S.C. § 103(a) over Calderbank (rejection of claim 1) and over "Transmit Diversity by Antenna Selection in CDMA Downlink" to Hottinen et al. (Hottinen).

Claims 9-14 recite "A method of operating a communication circuit, comprising the steps of: transmitting a plurality of signals from a respective plurality of transmitters; *receiving* an identity of a selected transmitter of the plurality of transmitters in response to transmit diversity and signal strength of each respective transmitter; and *transmitting from the selected transmitter and not transmitting at least one signal from at least another transmitter* in response to the step of receiving." (emphasis added). Calderbank does not teach or suggest "receiving an identity of a selected transmitter" for two reasons. First, Calderbank does not select a transmitter. Calderbank must receive signals from all transmitters in order to decode B bits in each time slot as previously discussed. Second, since no transmitter is selected, there is no motivation to receive an identity of a selected transmitter.

Furthermore, Calderbank does not teach or suggest "transmitting from the selected transmitter and not transmitting at least one signal from at least another transmitter in response to the step of receiving." As previously stated, Calderbank does not select a transmitter. Moreover, Calderbank teaches transmitting from all transmitters. Otherwise, Calderbank would not decode B bits in each time slot. For all the foregoing reasons, therefore, claims 9-14 are patentable under 35 U.S.C. § 103(a) over Calderbank.

Hottinen discloses a CDMA system with M synchronous transmit antennas. This CDMA system is a single transmitter, since the transmit antennas are synchronous and are spaced sufficiently close to each other so that the propagation delays between each antenna and a mobile set (MS) are approximately the same. (page 768, left col., ¶ 1). Hottinen discloses that the MS estimates the channel power of all competing transmit antennas and determines the one with the most power according to equation (5). (page 768, right col., ¶ 5). The MS then sends a message to the base station (BS) transmitter indicating the best antenna. (page 768, right col., ¶ 6). The BS then

transmits only from the best antenna. (page 767, right col., ¶ 2). Hottinen, therefore, fails to teach or suggest "receiving an identity of a selected transmitter of the plurality of transmitters in response to transmit diversity and signal strength of each respective transmitter" as required by claims 9-14. Hottinen discloses a single transmitter with M synchronous transmit antennas. The base station (BS) does not receive the identity of a selected transmitter of the plurality of transmitters. Moreover, even if each antenna is taken as a separate transmitter, the best antenna is selected only as a result of signal strength. Claims 9-14, however, require selection "in response to transmit diversity and signal strength." Thus, claims 9-14 are patentable under 35 U.S.C. § 103(a) over Hottinen.

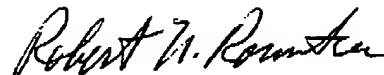
Hottinen also fails to disclose "transmitting from the selected transmitter and not transmitting at least one signal from at least another transmitter in response to the step of receiving." Since Hottinen discloses a single transmitter with M synchronous transmit antennas, there is no selected transmitter. Furthermore, even if the transmit antennas are taken as individual transmitters, the best antenna is not selected in response to the step of "receiving an identity of a selected transmitter of the plurality of transmitters in response to transmit diversity and signal strength of each respective transmitter." The antenna indices are known by the MS *a priori*. (page 768, right col., ¶ 6). The transmit antenna indices are not received as required by claims 9-14. Moreover, since the antenna indices are known by the MS *a priori* they are, therefore, not received in response to anything and certainly not in response to "transmit diversity and signal strength of each respective transmitter" as required by claims 9-14. For all the foregoing reasons, therefore, claims 9-14 are patentable under 35 U.S.C. § 103(a) over Hottinen.

New claims 15-70 are added to more specifically claim specific features of the present invention. Claims 15-28 are similar to original claims 1-14. Claim 15 recites "receiving a plurality of signals from *each* of a plurality of remote transmitters." Claim 23 recites "transmitting a plurality of signals from *each* of a respective plurality of transmitters." Claims 29-37 are similar to original claims 1-14. Claim 29 recites "receiving a plurality of signals from a plurality of remote transmitters, *the plurality of signals having a common code.*" Claim 37 recites "transmitting a

plurality of signals from a respective plurality of transmitters, *the plurality of signals having a common code.*" Claims 43-56 are similar to claims 1-14. Claim 43 recites "receiving a plurality of signals from a plurality of remote *base stations.*" Claim 51 recites "transmitting a plurality of signals from a respective plurality of *base stations.*" (emphasis added). Claims 57-70 are similar to original claims 1-14. Claim 57 recites "receiving a plurality of signals from a plurality of remote transmitters, *the plurality of signals having common data.*" Claim 65 recites "transmitting a plurality of signals from a respective plurality of transmitters, *the plurality of signals having common data.*" These features are disclosed at Figures 1 and 5 and page 8, lines 11-28 of the instant specification.

In view of the foregoing, applicant respectfully requests reconsideration and allowance of claims 1-70. If the Examiner finds any issue that is unresolved, please call applicant's attorney by dialing the telephone number printed below.

Respectfully submitted,



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